Ground Water Monitoring

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May 9, 2000

Ground Water Baseline Monitoring Requirements

OSM / TN 30 CFR 780.21(b)(1) GROUND WATER BASELINE REQUIREMENTS			
Regulations	**KY 405 KAR**	**VA 4 VAC 25-130**	**WV Title 38 CSR 2**
Location and Ownership	8:030 - Section 14(2)	780.21(b)(1)	Section 3.22.b (1)
Seasonal Variation	8:030 - Section 14(3)	780.21(b)(1)	?
Usage of Ground Water in Permit and Adjacent Area	8:030 - Section 14(2)	780.21(b)(1)	Section 3.22.b (1)
Water Quality Parameters	8:030 - Section 14(3)	780.21(b)(1)	Section 3.22.b (2)
Approximate Rates of Discharge or Usage of Supplies	8:030 - Section 14(2)	780.21(b)(1)	Section 3.22.b (3)
Depth to Water in the Coal Seam and each water-bearing stratum above and potentially impacted stratum below	8:030 - Section 14(3)	780.21(b)(1)	Section 3.22.b (3)

Ground Water Performance Monitoring Regulations

OSM / TN 30 CFR 780.21(i) GROUND WATER PERFORMANCE MONITORING PLANS			
Regulations	KY 405 KAR	VA 4 VAC 25-130	WV Title 38 CSR 2
Based on PHC and analysis of all baseline hydrologic, geologic information	8:030 - Section 14(2)	780.21(b)(1)	Section 3.22.h
Monitoring of suitable parameters	8:030 - Section 14(2)	780.21(b)(1)	Section 3.22.h
Identify parameters to be monitored, sampling frequency, and site locations.	8:030 - Section 14(3)	780.21(b)(1)	Section 3.22.h
Describe how the data will be used to determine the impacts of the operation upon the hydrologic balance.	8:030 - Section 14(2)	780.21(b)(1)	Section 3.22.h
Monitoring must be submitted to the RA every 3 months for each monitoring location	8:030 - Section 14(3)	780.21(b)(1)	Section 3.22.h

Where Does Uncertainty Exist?

- Establishing natural variability in quality / quantity to use in impact determinations
- Establishing all parameters that may be affected
- Sample locations / sample collection / sample handling / sample analysis
- Variability in comfort levels of the reviewers
- Differences between States, e.g. representative wells/springs, spoil wells, etc.
- Differences in acid base accounting analysis, presentation, and interpretation

Potential Effects on Ground Water Quantity and Quality

- Inproper sample site locations could lead to late detection of impacts.
- Inproper sample collection, handling, and analysis can provide a poor basis for comparing the “during mining” to the “baseline” (ambient) conditions.
- Incomplete user surveys might not establish all parameters that may be affected.
- Differences in acid base accounting analysis, presentation, and interpretation can lead to inconsistencies in PHC predictions.

Conceivable Actions to Reduce the Uncertainty

- Enhance the experiential knowledge base of the reviewers and permit preparers through standardization of testing methods, databases, field studies, etc.
- Establish postmining water quality from backfills and valleyfills to validate PHC predictions.
- Develop electronic data submission / storage requirements for submission of geologic and hydrologic data.